

U.S. ENVIRONMENTAL PROTECTION AGENCY
 POLLUTION/SITUATION REPORT
 Columbia Smelting and Refining Works - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region II

Subject: POLREP #2
 Extended Field Closures Announced - PJ1
 Columbia Smelting and Refining Works
 A24F
 Brooklyn, NY
 Latitude: 40.6738570 Longitude: -74.0057794

To: Margaret Gregor, USEPA Region 2 ERRD
 Natalie Loney, USEPA Region 2 PAD
 Elias Rodriguez, USEPA Region 02, PAD

From: Margaret Gregor, On-Scene Coordinator

Date: 4/24/2015

Reporting Period: 4/2/2015 through 4/24/2015

1. Introduction

1.1 Background

Site Number:	A24F	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	3/23/2015	Start Date:	3/23/2015
Demob Date:		Completion Date:	
CERCLIS ID:	NYN000206593	RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

Inactive Production Facility

1.1.2 Site Description

The Site is the location of a former secondary smelter in a mixed recreational, residential, commercial and industrial area of the Red Hook neighborhood in Brooklyn, New York. It includes the historic footprint of the former Columbia Smelting and Refining Works facility (Columbia), which is currently developed with a baseball/softball field, and the extent of lead-contaminated soil associated with this historic facility. The Site is within Red Hook Park, a 58-acre park owned by the New York City Department of Parks and Recreation (NYC Parks).

Several companies including Columbia Smelting and Refining Works operated a secondary smelting plant at the southeast corner of Lorraine and Hicks Street from the mid-1920s through the late 1930s.

Columbia manufactured several types of metals, including white metals and alloys, brass and bronze ingots, soft lead, antimonial lead, Babbitts, solder, type metals, terse metal, Britannia metal, die-cast metal, unbreakable metal and rerun zinc. While the facility was operating, most areas of the block where it was located were undeveloped. The building was demolished in the late 1930s, and the block was developed with four ball fields, identified as Red Hook Ball Fields #5 through #8; the outfields of these ball fields also include two cricket courts. This block is approximately four acres in size. The footprint of the historic facility now includes Ball Field #7 and a MTA bus stop.

NYC Parks learned of the historic Columbia facility in 2012 and collected soil samples from the ball fields on this block in February and March 2012. Lead concentrations up to 2,630 parts per million (ppm) were detected at the fields. In response, NYC Parks added an inch of infield material to each of the four infields and resampled them, hydroseeded the outfields and closed the fields for four to six weeks to increase grass cover, added wood chips to areas with bare soil, and excavated and paved over the Henry Street entrance to the fields which had contained high lead levels. Also in 2012, the New York State Department of Environmental Conservation (NYSDEC) began independently screening the Site as part of a nationwide portfolio of potential historic smelter sites. After screening the Site, NYSDEC referred it to EPA for review in early 2014. EPA is investigating the Site due to the referral from NYSDEC.

1.1.2.1 Location

The historic smelter facility was addressed as 98 Lorraine Street. The block where the historic smelter was located is bordered by Lorraine, Henry, Bay and Hicks Streets to the north, east, south and west, respectively. This block is surrounded by a large residential public housing complex (Red Hook East Houses) to the north, a community pool (Red Hook Pool) within Red Hook Park to the east, the remainder of Red Hook Park and associated recreational areas to the south, and residences as well as a condemned former industrial plant (a food and cosmetic dye manufacturer) to the west. A daycare center (Bumble Bee Daycare) is present among the residences to the west, and several playgrounds are present within the residential complex to the north. Available wind rose charts indicate that the prevailing winds in the vicinity of the Site are predominately to the southeast, with limited components to the north and southwest.

1.1.2.2 Description of Threat

Data from NYC Parks' 2012 soil sampling indicated that elevated lead levels were present in soil throughout the block which contains the footprint of the historic smelter facility, including lead levels of 999 and 1,600 ppm in the outfields and up to 2,630 ppm in the subsurface of the infields. Although actions taken by NYC Parks in 2012 helped to increase grass cover and in turn reduce direct contact with lead in soil at the fields, EPA observed exposed soil at the ball fields during site visits conducted between July and December 2014. Online inspection reports indicated a lack of routine maintenance at the fields in the early 2000s, and it is possible that exposed soil may be periodically present in the outfields or other areas of the block.

Direct contact with the elevated levels of lead within the upper 12 inches of soil may occur through common recreational activities on the fields and when children touch or dig into contaminated soil. Hand washing facilities are not currently present in the immediate vicinity of the impacted ball fields. Contaminated soil may be ingested or adhere to baseball/softball cleats, other footwear, skin or clothing, and may be tracked off-site. In addition, through the typical heavy usage of the athletic fields, contaminated soil may be disturbed and become airborne and available for inhalation.

Contact with the contaminated soil, or inhalation of contaminated soil particles, may present a health risk to those utilizing the recreational fields, particularly young children. The effects of exposure to lead are the same whether it enters the body through breathing or swallowing. The main target for lead toxicity is the nervous system, both in adults and children. Lead is a cumulative poison where increasing amounts can build up in the body, eventually reaching a point where symptoms and disability occur. Particularly sensitive populations are women of child-bearing age, because of the fetal transfer of lead, and children. Cognitive deficits are associated with fetal and childhood exposure to lead. An increase in blood pressure is the most sensitive, adverse health effect from lead exposure in adults. The Department of Health and Human Services has determined that lead and lead compounds are reasonably anticipated to be human carcinogens based on limited evidence from studies in humans and sufficient evidence from animal studies, and the EPA has determined that lead is a probable human carcinogen.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA began an assessment of the Site in 2014. After a thorough review of historic resources and all relevant background information, in October 2014 EPA collected soil samples from Ball Fields #5 and #7

as well as surrounding areas, all in locations which had not been previously sampled. Results indicated that there were elevated lead levels in the top inch of soil on the block containing Ball Fields #5-8, averaging 635 ppm, but the lead levels were within a typical urban background range and weren't considered to be an immediate health concern. Because higher levels of lead were detected from one inch to a foot below the ground surface, averaging 2,202 ppm, EPA determined that a removal action is required to protect public health in the long term. The pattern of detections of other metals including antimony, tin, arsenic, copper, zinc and iron as well as the lead-antimony and lead-tin relationships in the upper foot of soil at the fields indicated that the contaminants in the upper foot of the ball fields can be attributed to the historic smelter.

In March 2015, EPA completed a second round of soil sampling to delineate the areas with smelter-related contamination on the block which contains the historic smelter facility footprint, and also to screen other downwind athletic fields. Results were received in early April and indicated that lead is present throughout the block which includes the historic facility footprint and Ball Fields #5-8 at levels much higher than expected. Lead levels in the upper foot of soil on these ball fields average 1,580 ppm in the uppermost inch, 2,240 ppm at the 1-6" interval below the ground surface (bgs) and 2,590 ppm at the 6-12" bgs interval. Of 84 samples collected from the ball fields at all depths, 82 (98%) contained lead at levels above the EPA screening level or Removal Management Level (RML) of 400 ppm; in the upper foot, 80% of the detections exceeded 1,200 ppm. Detections of antimony (24 detections), arsenic (34), cobalt (1), iron (13) and thallium (1) also exceeded the respective RMLs.

These fields had been temporarily closed by NYC Parks in March 2015 to allow grass growth, and had been scheduled to open in late April. If these ball fields were to open as scheduled, the high levels of lead in soil throughout the ball fields may present an imminent and substantial endangerment to public health or welfare. Therefore, closure of Ball Fields #5-8 is warranted until a removal action is completed at the Site.

As part of the March 2015 sampling event, EPA also collected samples from five additional athletic fields and other high-traffic areas located downwind of the historic Columbia facility, beyond Bay and Henry Streets. Levels of lead and other metals in these areas were not similarly elevated compared to those in Ball Fields #5-8. The upper inch of soil contained only two lead detections above the RML of 400 ppm, averaging 324 ppm overall in the upper inch. The average lead concentrations were 419 ppm and 534 ppm in the 1-6" bgs and 6-12" bgs intervals, respectively. Elemental correlation analysis suggested that there may be a correlation between lead and antimony as well as other metals (tin, copper and zinc) indicative of smelter-related emissions in four of the fields south-southeast and southeast of the historic Columbia facility, especially at depth intervals beneath 6" bgs. This includes Ball Field #9, Soccer Fields #2 and #6, the areas surrounding the turf field (Soccer Field #1) and the picnic/spectator area along Bay Street. Based on the possibility that elevated detections of lead and other metals could be Site-related, EPA began sampling these four downwind fields on April 20, 2015. The sampling is currently ongoing and sampling is expected to continue through the week of April 27, 2015. Results of the sampling are expected in June 2015.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

On February 20, 2015, prior to the second round of soil sampling, EPA notified NYC Parks that a removal action is necessary at the Site, and that interim actions are required to minimize the potential for direct contact with soil contaminants until a removal action can be completed. Although initially the interim actions were to include provision and maintenance of hygiene stations Ball Fields #5-8, the March 2015 sampling results exhibited lead levels high enough to warrant closure of Ball Fields #5-8.

On April 8, 2015, EPA informed NYC Parks that the following actions are necessary:

- Keep Ball Fields #5-8 closed until completion of the removal action. All chain-link fences, including those at the egress points of the fields, should be secured and maintained. Inspect the fields on a weekly basis (or more frequently as necessary) to ensure that they remain closed and there is no evidence of field usage. Report all deficiencies and corrective actions to the EPA OSC.

- Provide signage regarding the field closures at all entrances to the fields with language agreed upon by EPA.
- Minimize the potential for public exposure to the unpaved areas of the block outside the fence line (along Lorraine and Bay Streets), via access restriction (fencing) and/or cover of these areas, potentially including mulch, landscaping fabric/tarp or other materials, until completion of the removal action.
- Continue to participate, together with EPA, in communications with elected officials, park users, community groups and the general public regarding the above action items, the ongoing investigation, and the proposed long-term removal. Provide a schedule, contacts and materials for communications to user groups.

On April 13, 2015, NYC Parks notified EPA that they would voluntarily undertake these interim actions under EPA oversight.

2.1.2 Response Actions to Date

Beginning March 23, 2015, as part of the interim actions initially required by EPA, NYC Parks conducted enhanced maintenance on the block which includes Ball Fields #5-8 bordered by Lorraine, Henry, Bay and Hicks Street to address areas where grass cover was sparse. This included spike aeration, addition of topsoil, hydroseeding, overseeding in more established lawn areas, and temporary closure of the fields to allow for establishment of grass cover and/or regrowth. On March 25 and 26, 2015, NYC Parks notified elected officials and park users of the temporary field closures. On March 27, 2015, NYC Parks installed chain link fences eight feet in height at the egress points of the park, in place of snow fences which had been placed there in fall 2014, to prevent public access. The enhanced maintenance has resulted in a fuller grass cover over the outfields, which will reduce the potential for lead-contaminated dust or storm runoff from the ball fields to migrate to other areas.

On April 20, 2015, both EPA and NYC Parks notified elected officials of the necessity for continued closure of the ball fields impacted by the historic Columbia facility until a permanent removal action can be completed at the Site. On April 21, 2015, EPA finalized a fact sheet discussing the extended ball field closure and additional sampling. On April 21 and 22, 2015, NYC Parks notified park users of the ball field closures. A public information session has been scheduled for May 4, 2015.

In addition, on April 23, 2015 EPA and NYC Parks completed a site visit at Ball Fields #5-8 to evaluate potential methods for mitigating public exposure to the open grassy areas between the sidewalk and the fence that encloses the ball fields. Potential considerations include fencing in these areas and provision of a deterrent or cover inside the fenced area. A plan for the updated interim actions, to be submitted to EPA, is pending.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

No potentially responsible parties related to the historic on-site smelter facility owners or operators have been identified at this time. Red Hook Park is owned and operated by NYC Parks.

2.1.4 Progress Metrics

Enhanced maintenance has been conducted at the ball fields, and the block which contains the historic smelter facility footprint has been closed until the time that a removal action can be completed at the Site. Public access to the fields on this block been restricted with chain-link fences.

2.2 Planning Section

2.2.1 Anticipated Activities

The sampling of Ball Field #9, Soccer Fields #2 and #6, the areas surrounding the turf field (Soccer Field #1) and the picnic/spectator area along Bay Street is expected to be completed during the week of April

27, 2015. Results will help to better define the aerial extent of contamination from the historic on-site smelter facility.

2.2.1.1 Planned Response Activities

The method for mitigating public exposure to the areas outside the fence on the block including Ball Fields #5-8 will be determined in the near future, and fencing and other materials will be installed. The plan from NYC Parks detailing the interim measures to be taken will be reviewed by EPA.

2.2.1.2 Next Steps

EPA expects analytical results from the April/May 2015 sampling in June, and the results will need to be reviewed and analyzed before the next steps can be determined. Once the extent of the Site-related contamination is defined, the permanent removal action can be planned. The permanent removal action at the Site will likely include capping of areas impacted by the historic Columbia facility.

2.2.2 Issues

There are no issues to report at this time.

2.3 Logistics Section

A logistics section was not activated for this response. No logistical challenges or issues were encountered during this reporting period.

2.4 Finance Section

2.4.1 Narrative

Assessment funding under RST 3 contract is being utilized to conduct EPA's assessment; this section is not applicable.

2.5 Other Command Staff

2.5.1 Safety Officer

On January 12, 2015, the Health and Safety Plan for EPA's assessment at the site was finalized. No safety challenges or issues were encountered during this reporting period.

2.5.2 Liaison Officer

The EPA OSC is acting Liaison Officer with local and government officials.

2.5.3 Information Officer

Natalie Loney has been designated as the Community Involvement Coordinator for the site. Elias Rodriguez is the press coordinator. Berry Shore is the liaison for elected officials.

3. Participating Entities

3.1 Unified Command

The EPA OSC and the NYC Parks Commissioner for Brooklyn Borough have been identified as points of contacts for EPA and NYC Parks, respectively; however, a formal Unified Command is not necessary for this response.

3.2 Cooperating Agencies

EPA is coordinating efforts with various entities that have been integral to the assessment and plans for the interim and removal actions, including but not limited to:

- New York City Department of Parks and Recreation
- New York City Department of Law
- New York City Department of Health and Mental Hygiene
- Office of the Mayor of New York City
- New York State Department of Environmental Conservation
- New York State Department of Health

4. Personnel On Site

Personnel on-site for the soil sampling event currently include:

- EPA OSC (1)
- EPA Community Involvement Coordinator (1)
- NYC Parks Environmental Remediation Project Manager (1)
- RST 3 Contractors (4 to 7)

All personnel will demobilize immediately following completion of the current soil sampling event.

5. Definition of Terms

EPA:	United States Environmental Protection Agency
OSC:	EPA On-Scene Coordinator
MTA:	Metropolitan Transit Authority
NYC Parks:	New York City Department of Parks and Recreation
NYSDEC:	New York State Department of Environmental Conservation
ppm:	parts per million, equivalent to one milligram per kilogram (mg/kg)
PRP:	Potentially Responsible Parties
RST 3:	EPA Removal Support Team contractors

6. Additional sources of information

6.1 Internet location of additional information/report

Additional information can be found in the "Documents" section of this website.

For more information on lead exposure, please visit <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=93&tid=22>

6.2 Reporting Schedule

POLREPS will be generated as the situation warrants.

7. Situational Reference Materials

Not applicable.